

Remarks

Thorough examination by the Examiner is noted and appreciated.

The claims have been amended to more clearly claim Applicants invention.

Support for the amended and newly drafted claims are found in the Drawings and the Specification. No new matter has been added.

For example support for the amended claims is found in the Specification in Figures 1, 3, and 4-8, original claims 3 and 10 and in the Specification at page 18 beginning at line 7:

"Within the preferred embodiment of the present invention, the thermal annealing environment which is employed for forming within the silicon semiconductor substrate 20 the series of thermally grown patterned silicon oxide layers 26a, 26b, 26c and 26d interposed between the series of patterned pad oxide layers 22a, 22b, 22c, 22d and 22e having formed aligned thereupon the series of patterned silicon nitride layers 24a, 24b, 24c, 24d and 24e and extending beneath the series of patterned pad oxide layers 22a, 22b, 22c, 22d and 22e is typically and preferably provided as an oxidizing thermal annealing

environment at a temperature of from about 700 to about 1100 degrees centigrade for a time period of from about 1 to about 180 minutes, to provide the series of thermally grown patterned silicon oxide layers 26a, 26b, 26c and 26d of thickness from about 100 to about 1000 angstroms and **with a curvature generally as illustrated within the schematic cross-sectional diagram of Fig. 3 extending beneath the series of patterned pad oxide layers 22a, 22b, 22c, 22d and 22e.**"

And at page 21, beginning at line 13:

"As is understood by a person skilled in the art, the series of round bottomed apertures 28a, 28b, 28c and 28d may be formed employing a reactive ion etch (RIE) etch method as is otherwise conventional in the art of semiconductor integrated circuit microelectronic fabrication, which will typically and preferably employ a chlorine containing etchant gas composition, but with an appropriate and timely addition of a sidewall passivation polymer forming material, such as a bromine containing sidewall passivation polymer forming material, to **provide the round bottoms** to the series of round bottomed apertures 28a, 28b, 28c and 28d. Typically and preferably, each of series of **round bottomed apertures** 28a, 28b, 28c and 28d is formed to a depth within the silicon semiconductor substrate 20 of from about 100 to about 1000 angstroms."

**PREMATURE FINALITY**

Applicants respectfully request withdrawal of Finality since the newly applied art was not necessitated by Applicants amendments, but rather, the newly cited art represents more pertinent art to Applicants disclosed invention. Since Applicants are entitled to a complete search and examination of their invention including reasonably anticipated limitations that may be claimed to avoid multiple searches resulting in piecemeal examination, Applicants respectfully request withdrawal of finality of rejection to either allow entry of the present amendments to place the application in condition for allowance or for an opportunity to meaningfully amend Applicants claims to define over the newly cited art.

For example, Applicants respectfully refer Examiner to the following portions of the MPEP:

**MPEP 706.07**

Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in

reply to this action the applicant should amend with a view to avoiding all the grounds of rejection and objection. Switching from one subject matter to another in the claims presented by applicant in successive amendments, **or from one set of references to another by the examiner** in rejecting in successive actions claims of substantially the same subject matter, will alike tend to defeat attaining the goal of reaching a clearly defined issue for an early termination, i.e., either an allowance of the application or a final rejection.

**MPEP 707.07(g) Piecemeal Examination**

Piecemeal examination should be avoided as much as possible. The examiner ordinarily should reject each claim on all valid grounds available, avoiding, however, undue multiplication of references. (See MPEP § 904.03.)

**MPEP 904.03**

It is normally not enough that references be selected to meet only the terms of the claims alone, especially if only broad claims are presented; but the search should, insofar as possible, also cover all subject matter which the examiner reasonably anticipates might be incorporated into applicant's amendment. Applicants can facilitate a complete search by including, at the time of filing, claims varying from the broadest to which they believe they are entitled to the most detailed that they would be willing to accept.

**MPEP 706.07(A)**

Furthermore, a second or any subsequent action on the merits in any application or patent undergoing reexamination proceedings will not be made final if it includes a rejection, on newly cited art, other than information submitted in an information disclosure statement filed under 37 CFR 1.97(c) with the fee set forth in 37

CFR 1.17 (p), of any claim not amended by applicant or patent owner in spite of the fact that other claims may have been amended to require newly cited art.

A second or any subsequent action on the merits in any application or patent involved in reexamination proceedings **should not be made final if it includes a rejection, on prior art not of record, of any claim amended to include limitations which should reasonably have been expected to be claimed.** See MPEP § 904 *et seq.*

**Claim Rejections under 35 USC 102**

1. Claims 1, 2, 4-6, 9, 9, 11-13 stand rejected under 35 USC 102(b) as being anticipated by Semple et al. (US 6,218,701).

Semple et al. disclose a structure and method for forming a MOS device to reduce channel resistance (see col 1, lines 34-37). The structure and method of Semple et al. disclose forming a corrugated substrate surface (Figure 2A; item202) and corrugated overlying gate (Figure 2A, item 207 (see col 1, lines 60-66; col 3, lines 6-14)). Semple et al. discloses that the corrugations are etched with controllable sidewall angles (oblique portions) (col 3, lines 23-35), and are shown having planar valley portions and planar peak portions (see Figures 2A, 4, 3B, and 3D; col 3, line 8, col 4, lines 1-3; claim 1).

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Thus, Semple et al. do not disclose the structure or method of Applicants including:

"an interface of the channel region covered by the gate electrode, **said corrugated interface comprising rounded valley bottom portions**" as disclosed, shown and claimed by Applicants.

Or where

**"said corrugated interface comprising rounded valley bottom portions and peak portions"**

or where

"wherein an upper surface of the gate electrode is corrugated, said corrugated surface comprising rounded valley bottom portions"

or where

"said corrugated interface and said corrugated surface comprising rounded valley bottom portions and rounded peak portions" as disclosed, shown and claimed by Applicants.

Thus, Semple et al. is insufficient to anticipate Applicants disclosed and claimed invention.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

#### **Claim Rejections under 35 USC 103**

Claims 3, 7, 10 and 14 stand rejected under 35 USC 103(a) as being unpatentable over Semple et al.

Applicants reiterate the comments made above with respect to Semple et al.

Since Semple et al. disclose a distinctly different process for forming the corrugated surface, and which could not achieve

Applicants disclosed and claimed structure, Examiner has no basis for arguing the obviousness of the dimensions of Applicants structure or for any argument relating to criticality of dimensions or a necessity of showing unexpected results, both of which are applicable to overlapping ranges (see MPEP 2131.03, 2144.05) and may be required to rebut a *prima facie* showing of obviousness.

The teachings of Semple et al. are clearly insufficient to make out a *prima facie* case of obviousness.

"Finally, the prior art reference (or references when combined) must teach or suggest **all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Claims have been amended to clarify Applicants' disclosed, shown and claimed invention. Applicants respectfully request Examiner to withdraw finality and allow entry of the amendments to place the claims in condition for allowance. A favorable reconsideration of Applicants' claims is respectfully



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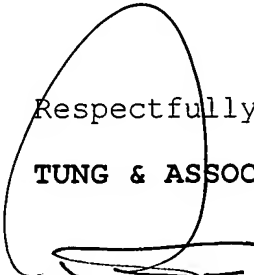
requested.

Based on the foregoing, Applicants respectfully submit that the Claims are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

In the event that the present invention as claimed is not in condition for allowance for any reason, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,

**TUNG & ASSOCIATES**



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